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ABSTRACT

A year-long, quasi-experimental study investigated the comparative effects of a whole language approach and a code emphasis approach upon the emergent literacy of 53 girls in two kindergarten classes in an all girls' parochial school in the Northeast. Subjects in the experimental class received instruction in Holdaway's Shared Book Experience Program, a whole language approach, while subjects in the comparison class received instruction in Lippincott's Beginning to Read, Write, and Listen Program, a code emphasis approach. Emergent literacy--the concepts about reading and writing resulting from a child's first encounters with printed material--was divided into three subsets: linguistic, orthographic, and grapho-phonemic literacy. Posttest results for each of these literacy sets indicated a significant treatment effect favoring the whole language group. The results corroborated Holdaway's research, which indicated a high level of success with the Shared Book Experiences in comparison with a code emphasis approach. The study showed a naturalistic learning model to be structured and viable within a school instructional environment that was informal, relaxed, and supportive. (HTH)

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THE EFFECTS OF A CODE EMPHASIS APPROACH AND A WHOLE LANGUAGE APPROACH UPON EMERGENT LITERACY OF KINDERGARTEN CHILDREN

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ABSTRACT

This study investigated the comparative effects of a whole language approach (meaning first) and a code emphasis approach (phonics first) upon emergent literacy of kindergarten children. Fifty-three kindergarteners in two intact classrooms participated in the year-long quasi-experimental study. One class, the experimental group, received a whole language approach, the Shared Book Experience program. A second, the comparison group, received a code emphasis approach, Lippincott's Beginning to Read, Write and Listen program. This study also represents a quantitative investigation of Holdaway's Shared Book Experience model which was previously explored ethnographically.

The major dependent variable, emergent literacy, was divided into three subsets. Emergent literacy is the range of behaviors resulting from a child's first encounters with printed material--the concepts about reading and writing that represent the early indicators of entrance to literacy. A series of dependent measures assessing students' Linguistic literacy set, Orthographic literacy set, and Grapho-phonemic literacy set indicated a significant treatment effect favoring the whole language group and is consistent with results Holdaway obtained through qualitative research. Results are discussed for each aspect of emergent literacy.

Research has clearly shown that many children are able to read at an early age (Brzienski & Driscoll, 1971; Clark, 1976; Clay, 1979; Durkin, 1966). In general, though, those who are early readers have learned to read without any formal instruction--within an environment that stimulated them to learn naturally. This is strikingly similar to the manner in which oral speech is learned. Almost all early readers come from book-oriented homes and have been read to most of their lives (Butler & Clay, 1983; Doake, 1981; Goodman, 1975; Soderbergh, 1977). Mason & McCormick (1981) interpret these research results to indicate that it is unnecessary to delay reading instruction until a child reaches first grade readiness. They point out, however, that what and how to teach are still the subjects of varying opinions. This lack of consensus is very much a current concern in view of a growing national trend toward full day kindergartens (Hechinger, 1983; Greene, 1985) that are presently operating without clearly defined guidelines for teaching reading to four and five year olds (Rohter, 1985; Seefeldt, 1985; Slaughter, 1983). This question becomes significant with consideration of the tendency for first grade reading curriculum structures to filter downward to the preschool level (Maeroff, 1983; "Reading and Pre-First Grade," 1979). A persistent concern for educators is whether schools can or should foster literacy through use of a natural developmental approach or whether a formal program of reading instruction is required.

Preschool reading approaches range along a continuum of a strong code approach to a holistic early literacy approach. At

one end of the continuum, a code emphasis approach to beginning reading describes the development of literacy as occurring through a series of skills learned in sequential developmental stages presented primarily through teacher-directed activities. Reading is seen as data-driven, bottom-up or outside-in information processing. Readers begin with a synthetic analysis of the components of words--letters and their corresponding sounds--and, as they attend to these, begin to have expectations of the words the letters spell and the sentences these words create. Decoding of print is the prominent goal; children must learn alphabetic principles and skills of phonemic segmentation in order to be taught to read. Comprehension of material is viewed as an outgrowth of the extent of automaticity skill in decoding (Adams, Anderson & Durkin, 1977; Chall, 1983; Liberman & Shankweiler, 1979; Otto, 1982; Perfetti & Lesgold, 1979; Smith, 1979).

At the other end of the continuum, a whole language view of early literacy as an integrated, meaningful process maintains that children learn to read and write in the same manner and for similar reasons as they learn to speak and listen. They learn in a natural manner because they need to engage in social communication (Goodman & Goodman, 1979). Reading is seen as conceptually-driven, top-down or inside-out information processing. In contrast to print-bound processing, readers are seen gaining perspective of the whole before analysis of the component parts. Readers make hypotheses regarding the information on the printed page through use of knowledge already possessed. This knowledge occurs as a result of previous learning and places the reader in active con-

trol of the meaning to be construed from the text. A facilitating and nurturing environment is thus seen as an inherently vital aspect of whole language teaching. Decoding skill is viewed as an outgrowth of making connections between print and meaning, and children can discover these connections if they are surrounded by an environment of print and given relevant literacy experiences (Bissex, 1981; Clark, 1983; Goodman, 1970,1975; Holdaway, 1979; McKenzie, 1977; Otto, 1982; Smith, 1979). Literacy development is thus viewed as a whole language process occurring within a social language context (Taylor, 1983).

Holdaway (1979) provides a comprhensive ethnographic report on the Shared Book Experience program developed in New Zealand, which is a whole language approach to emergent reading. This program is reported to be successful in fostering a developmental process leading to children teaching themselves to read. Accordingly, this study investigated the comparative effects of two divergent approaches to preschool literacy: a code emphasis approach--operationalized by Lippincott's Beginning to Read, Write and Listen program, and a whole language approach--operationalized by Holdaway's model of Shared Book Experience. This study represents the first quantitative exploration of a whole language approach in comparison with a code emphasis approach. The major focus was upon exploring comparative effectiveness; an additional aspect was to determine whether a natural developmental model--demonstrated by research as the effectual paradigm of home learning--was indeed viable in a classroom situation.

The debate between proponents of phonics first (code emphasis) and meaning first (whole language emphasis) is not a new

phenomenon. It has assumed renewed and more intense focus because of two developments: a) the documentation of constantly-expanding requirements for greater levels of literacy and the concomitant reduced rather than increased attainment of reading skill by children in our schools (Anderson, Hiebert, Scott & Wilkinson, 1985; "A Nation at Risk," 1983; Resnick, 1979), and b) current research--especially within the last decade--that has caused a fundamental shift of emphasis from content or product to process in the area of language and literacy learning (Harste, Woodward & Burke, 1984). The debate has now shifted from a methodological viewpoint to a more theoretical viewpoint and there is much greater focus upon the nature of the process of reading than on specific instructional techniques (Otto, 1982). A result of this concern has been that the concept of emergent literacy in preschool children has also undergone a significant change.

Recent research on emergent literacy regards it as the range of behaviors resulting from a child's first encounters with printed material. The child develops concepts about reading and writing that represent the early indicators of entrance to literacy (Doake, 1981; Clay, 1979; Holdaway, 1979; McKenzie, 1977). This is different from a simple readines notion, as children who demonstrate emergent literacy are believed to display mature reading strategies. Holdaway (1979) refers to these strategies as "literacy set". This study utilized three components of Holdaway's model for literacy set as dependent variables. These include: 1) Linguistic literacy set: The child demonstrates familiarity with written dialect in oral form, builds extensive models for the diverse features of written language and demonstrates development

in syntax, semantics, vocabulary, intonation patterns and idiomatic usage for literary English; 2) Orthographic literacy set: The child demonstrates knowledge of the conventions of print including such concepts as: a) the story is presented in print, not in pictures; b) the directional aspects, such as the movement of print from left to right and top to bottom; c) the conventions of punctuation; and d) the print concepts of letter, word, capital letter and lower case letter; 3) Grapho-phonemic literacy set: The child demonstrates knowledge of the phonetic principle of sound-symbol relationships, including letter names and sounds.

It is readily seen that, as an educational goal, this concept of emergent literacy encompasses a wide array of skills; clearly, children who attain this set toward literacy demonstrate considerably more than knowledge of the phonetic principle. There is a vast difference in the conceptualization of emergent literacy inherent in each approach (code and whole language) and it is this difference which ultimately dictates the curriculum.

The diverging views of emergent literacy can be most readily seen from research into aspects of language and orthography. A central issue in regard to language is the posited relationship between spoken and written language. Viewed from the perspective of the code emphasis approach, reading is seen as a process of translating printed symbols into some approximation of oral language (Resnick, 1979). Oral speech is considered the primary language system, one that is acquired naturally without need for direct instruction. On the other hand, reading is seen as secondarily derived from speech--unnatural and not universally learned. As a consequence, reading must be taught (Chall, 1979). A whole

language approach views oral speech and written language as autonomous language processes; written language is organized differently fromspoken language and fulfills different social functions. For example, oral language is acquired in the context of external events that provides comprehension cues not found in print (Adams, et al., 1977) and is thus generally situationally embedded (Goodman, 1977). Because written language is "preservable," it is usually more polished and complex (Goodman, 1975). Speech and print are not seen as totally different languages, for they share a common meaning base, vocabulary, and similar grammatical forms (Goodman & Goodman, 1977; Smith, 1979). When reading is viewed as an autonomous language process, however, it follows that it cannot be taught as if it were parasitic on speech.

There is consensus among whole language supporters that children are aided toward achieving literacy through fostering their listening skills. Clark (1976) equates reading aloud to children with actual reading instruction. Reading aloud expands vocabulary (Butler & Clay, 1983) and helps children gain insight into the differences between book language and spoken language (Smith, 1977). Applebee (1978) believes that children attain critical literacy abilities as they develop a sense of story and asserts that it positively influences reading comprehension. Sense of story progresses in a developmental fashion and, therefore, the extent of children's internalization of a story heard effects reproduction and production of stories told (Brown, 1977). Children need to develop the sophisticated linguistic abilities necessary for handling book language, for literary language is more complex and highly structured and has a richer syntax than natural

spoken language (Cullinan, 1977).

Thus, a whole language approach considers provision of diversified language experiences and repetitive reading aloud as far more valuable preschool literacy activities than sequential lessons that teach recognition of individual letters and sounds. On the other hand, the paradigm of code-oriented literacy development does not concern itself with fostering continuous language growth as a beginning reading function(i.e., does not equate literacy and language for initial instruction), but rather postulates that comprehension and language development will be by-products of efficient and rapid decoding. Whole language theorists do not consider this reading, for they maintain that true reading is distinguished by readers' ability and opportunity to reconstruct a message from print (Goodman, 1975).

With regard to emergent literacy and orthography, a code-oriented approach places anticipated importance upon orthographic regularity. Phonics programs commonly introduce all the orthographic patterns that can be exemplified by regular spelling units (Carroll & Walton, 1979), for reading is thought to occur as a result of letter-by-letter, word-by-word analysis of the textual input. Educators have questioned, however, whether the sequential steps used as a teaching structure actually represent the pattern within which children learn to read or, whether the way we teach is the way children actually learn (Clark, 1976; Goodman, 1972; Lindfors, 1984; Mason, 1982; Southgate, 1971).

Mason (1980) found that early knowledge of consonant sounds occurred prior to formal instruction. Goodman (1972) states that children use semantic and syntactic information to facilitate

letter and word identification and only then move on to use graphic information. Rumelhart (1977) documents that letters are perceived on the basis of surrounding letters and that the perception of words depends on the syntactical and/or semantic environment in which words are encountered. Whole language research indicates that reading each word is not a necessity, but that children must understand what they read. How? Metacognitive experiences--knowledge and regulation of one's own cognitive processes--occur as comprehension fails; fluent reading which is understood, however, proceeds effortlessly and unconsciously (Armbruster, Echols & Brown, 1983; Brown, 1980). Significantly, metacognitive constructs appear among children as young as four years of age (Mason, 1984).

The detailed visual analysis so rigorously taught in a code emphasis program occurs quite naturally in a whole language classroom as children independently discover the alphabetic principle through active manipulation of the craft of writing (Calkins, 1983; Dyson, 1982; Graves, 1983). This is not surprising in view of recent research that demonstrates that at ages three and four, children know how to represent messages with appropriate use of conventions of print (Clay, 1979; Deford & Harste, 1982), and are able to effectively spell phonetically through an unconscious ability to perform a "tacit analysis" of phonological features of the English sound system (Read, 1971; Zutell, 1978). Children need to be permitted to perform this analysis within their own time frames for development (Clay, 1975) and within supportive environments that afford the opportunity for writing activities that are

functional and relevant (Teale, 1982).

This is the basis for a most critical distinction between the kind of writing assigned to children in a code emphasis program and that undertaken by children in a whole language setting. Children generally fail to see the relevance or usefulness of the handwriting drill and copying exercises in workbook form that are the ubiquitous forms of writing activity in a code-oriented program. Rosenblatt (1982) advises that drills and exercises that do not satisfy any meaningful purpose should be recognized as ancillary.

Kindergarteners in a whole language program are encouraged to write, with concern shown only for composition. Early writers use invented spelling, which appears to be a truly developmental phenomenon in that it is found to be astoundingly uniform from child to child (Bissex, 1980; Chomsky 1979; Read, 1971). It is through the use of invented spelling, an approximation, that children are able to gain orthographic control without being formally taught; the opportunity and the proper environment need only be supplied.

Present research confirms the value of a whole language approach for beginning reading and indicates that impressive results are attainable (Anderson, et al., 1985; Harste, et al., 1984; Holdaway, 1984). Much of the current research literature features presentation of the theoretical constructs of a whole language approach and the curriculum structures that develop naturally from this philosophical basis (DeFord & Harste, 1982; Doake, 1983, 1985; Dyson. 1982; Goodman & Goodman, 1981; Melser, 1983; Newman, 1983). A critical question, however, is whether a whole

language approach will produce better results than existing programs in current use. It was hypothesized that the use of a whole language approach with kindergarten children would have a greater effect upon emergent literacy than a code emphasis approach.

Method

Subjects and design

The original sample consisted of 59 children in two intact kindergarten classes in an all girls' parochial school in the northeast. Results are reported only for the 53 students for whom complete data are available. The children all came from middle class homes and shared similar cultural and religious orientation. Fathers' occupations were all within white collar employment situations, and only eight mothers maintained part or full time jobs outside the home. All children were fluent in English.

This study used a quasi-experimental pretest-posttest non-equivalence group design. One classroom with 27 youngsters was designated as the whole language (experimental) group and a second classroom with 26 youngsters was designated as the code emphasis (comparison) group. The mean age for each group respectively was 5.0 (SD = 0.25) and 5.1 (SD = 0.31). No significant differences ($p > .05$) between groups were found on pretest measures of the dependent variables: The Test of Language Development- Primary Level (TOLD-P), the Book Handling knowledge Task (BHKT), and the Metropolitan Achievement Test, Reading Instructional Tests (Primer Level) (MAT). The subjects were markedly similar on pretest

measured ability; the sample did not contain any children with learning problems or handicapping conditions.

Procedures

The year long study began in September and ended in June. Pretesting took place in September and October; posttesting was administered in May and June. Actual instruction in both groups ran from November through June. Amount of instruction (time on task) and time of instruction were held constant. The code emphasis approach was administered by the regular classroom teachers. Four observations were made by an unbiased observer to determine whether the code emphasis program was used effectively. The data on all four checklists (developed by the researcher) was reviewed by the observer and the researcher and indicated that each lesson featured an appropriate teaching sequence.

The whole language approach was also taught by the regular classroom teachers with the researcher participating as instructor and observer. An initial six week training period was held during which the researcher taught the experimental class. After this period, classroom instruction was shared by the researcher and the two regular classroom teachers with almost total instruction carried out by the regular teachers during the final three months of the study. The researcher maintained presence in the experimental classroom at least three times a week throughout the entire study.

For both pre and posttesting assessments, children were tested in random order, alternating between comparison and experimental group subjects. Except for one pretest (TOLD-P), which extended over a three week period of time, all other assessments were effected within less than a two week period of time for both

groups for each pre and posttest administration.

Treatment variables

Code emphasis approach (comparison group): This approach to beginning reading consists of a highly structured teacher-directed program of alphabetic instruction within a multisensory format. Children receive their own sets of 24 letterbooks which contain activities related to the letters and reading skills emphasized. The focus is upon auditory segmentation, grapheme-phoneme analysis and reinforcement of one or more traditional readiness areas such as colors, shapes or directionality. A teacher's guide for each letterbook specifies the precise tasks to be accomplished as well as the exact words that must be used as stimuli for each letter.

Whole language approach (experimental group): This approach to beginning reading focuses upon the establishment of a natural developmental learning environment (similar to the home bedtime story situation) in which children and teacher share a variety of meaningful literacy experiences gathered around a big book or experience chart. The learning environment is trusting, secure, expectant and is free from competition, criticism and constant correction (Holdaway, 1979; Park, 1982). The daily program of Shared Book Experiences used the following format (Holdaway, 1979, pp. 72-73):

1. Welcoming activity: reading aloud of poem, chant, or song; use of enlarged material (printed matter large enough for group viewing).

2. Favorite stories: rereading of stories, usually by request; unison participation; discussion of syntax.

3. Language activity: exploration of language through games, riddles, puzzles.

4. New story: introduction of new story for the day; words pointed to as they are read aloud; language experiences shared.

5. Independent reading: self-selection of old favorites to read; engagement in literary activities of choice.

6. Expression: art and writing activities; group drama.

New Literary experiences evolve through three stages: discovery, exploration and independent experience (Holdaway, 1979). Children are introduced to the new literary experience in the listening situation and participate in choral reading and discussion in a risk-free, nonpressured environment. Texts are reread for enjoyment, familiarization and increased participation in reading-like behavior. Doake (1981) defines reading-like behavior as simulation of reading without reference to print, and found it to be a strongly prevalent precursor of actual reading behavior. Accordingly, the children in this study were given independent experiences with reading material to foster enhanced reading-like or reading behaviors. Small versions of enlarged print books were made available--along with many copies of most books read aloud in class--for individual and/or small group reading. Thus, the whole language approach focused upon mastery of tasks that takes place with apparent ease as distinct from the learning of skills that appears to require direct instruction.

Dependent measures

The major dependent variable in this study was emergent literacy. Three instruments were used in assessment of the three

literacy set factors of emergent reading. The five principle subtests of the Test of Language Development - Primary (TOLD-P) and the Book Handling Knowledge Task (BHKT) were used, respectively, as pretest and posttest assessment of linguistic and orthographic literacy set. One of the two selected subtests of the Metropolitan Achievement Tests (MAT), Letter Recognition, was used in pretest and posttest measurement of grapho-phonemic literacy set. The second subtest, Phoneme/Grapheme: Consonants, was used as posttest measure only, as it was deemed potentially frustrating for children just entering kindergarten. Assessment reflected the curricula of both approaches. Language and the phonetic principle were measured with the TOLD-P and MAT, two standardized instruments. Concepts about print, reflecting current constructs of emergent literacy, were assessed with the BHKT (Goodman & Altwerger, 1981)--a rating scale based on interview and observation of children involved in a book-reading experience.

Data analysis:

This study investigated one major hypothesis. Each of three parts, investigating the factors of emergent literacy, was tested with a separate ANCOVA comparing treatment and comparison groups. For linguistic and orthographic literacy set, treatment and comparison group mean scores for TOLD-P and BHKT scores were compared by means of separate ANCOVAs with covariates (age and pretest). For grapho-phonemic literacy set, the analysis was divided into two parts to reflect separate treatment of the Letter Recognition and Phoneme/Grapheme: Consonants subtests of the MAT. Treatment group and comparison group posttest Letter Recognition mean scores were compared by means of an ANCOVA with covariates (age, pretest).

As no pretest was administered for the Phoneme/Grapheme: Consonants subtest, posttest mean scores for treatment and comparison groups were compared by means of a t-test.

Results

Table 1 presents mean scores, standard deviations and gain scores for students' performance on the TOLD-P (Linguistic literacy set), the BHKT (Orthographic literacy set), and the MAT (Grapho-phonemic literacy set). For ANCOVA analyses, age and pretest were designated as covariates. A Pearson product-moment correlation was computed to determine if pretest age correlated with posttest measures of the dependent variables. All correlations were nonsignificant and below a magnitude of .2 and precluded the use of age as a covariate.

ANCOVA results revealed a significant main effect for treatment favoring the whole language group on all dependent measures. The posttest means were adjusted on all measures to eliminate differential effects attributable to initial differences in pretest scores. The separate ANCOVA analyses indicated a significant main effect for Linguistic literacy set (TOLD-P) $F(1,50) = 86.392$, $p > .001$, a significant main effect for Orthographic literacy set (BHKT) $F(1,50) = 65.549$, $p > .001$, and a significant main effect for Grapho-phonemic literacy set (MAT, Letter Recognition subtest) $F(1,50) = 6.560$, $p > .01$. The experimental group thus obtained consistently higher posttest scores than did the comparison group.

Posttest only mean scores for the MAT Phoneme/Grapheme : Consonants subtest were compared by means of a t-test. The ex-

perimental group mean score was 19.19, and was significantly higher ($p > .05$) than the comparison group mean score of 16.77. Thus, results of all data analyses indicated that a whole language approach used with kindergarten children in this study had a significantly greater effect upon emergent literacy than did a code emphasis approach.

Discussion

The results of the data analyses indicate that a whole language approach to preschool literacy was highly effective. This study corroborated Holdaway's (1979) ethnographic research--which indicated a high level of success with the Shared Book Experiences program--through quantitative analysis of Shared Book Experiences in comparison with a code emphasis approach. Obtained results are also seen as significantly related to research documented in a recent report entitled "Becoming a Nation of Readers: The Report of the Commission of Reading (Anderson, et al., 1985). The Commission acknowledges the success of home environments in fostering emergent literacy and the critical value of reading aloud to children. The Commission also cites the recognized efficacy of a whole language approach in stimulating literacy at the preschool level.

This study demonstrated that the home bedtime story was applicable to and employable within the school setting. Shared Book Experiences provided the children in the whole language classroom with a literacy routine that was predictable and organized; specific literacy activities and events were presented on a regular basis. The whole language program involved use of full-bodied literature rather than workbook exercises for isolated

letters and sounds, but manifested a systematic instructional profile. The children's socio-literary interactions evolved into a consistent and well-ordered routine fully related to the literacy process. Thus, a naturalistic learning model was shown in this study to be structured and viable within a school instructional environment that was informal, relaxed, and supportive.

This study also corroborates past research in the following areas:

Areas pertaining to Linguistic literacy set

Reading is seen as a language process, developing according to socio-psycholinguistic principles. Literacy movement occurred within a meaning-oriented paradigm that focused on the whole of a literacy event before an analysis of component parts. Written language was seen as developing in a manner similar to that in which oral language develops, and for comparable functional purposes. The children were permitted to create their own systems of language through interaction with their peers, with adults, and with literacy materials presented. Resultantly, the children in the whole language classroom became avid consumers of literature and rapidly developed a sense of story. Reading became an activity of choice and reflected the youngsters' sense of control over the literacy process.

Children were observed to bring a vast amount of acquired knowledge to the school setting and the learning situation. Furthermore, the children consistently applied this knowledge in the process of gaining literacy. The social, cultural, and relational contexts of their backgrounds melded with learning in a manner that corroborates the view of literacy as a social process.

Areas pertaining to Orthographic and Grapho-phonemic literacy Set

The children in the whole language classroom demonstrated that they were able to gain a statistically significant range of emergent literacy behaviors without direct instruction of the alphabetic/phonetic principle. In fact, the experimental group, which was never formally instructed in phonics, did significantly better on formal measures of phonetic knowledge than did the code emphasis group. Knowledge of orthography developed alongside gains in semantic and syntactic interpretation of printed matter. Children in the whole language classroom made developmental connections between meaningful content of print and the alphabetic representation of sound and symbol. What is of critical importance is that all phonetic analysis undertaken by the experimental group was child-directed and text-elicited.

A child's age did not prove to be a factor in the literacy equation; children differed in the literacy skills they attained at the end of the study, but this difference was not a function of age. A whole language program provided the experimental group children with the opportunity to gain literacy at their own pace in a natural manner, without the debilitating pressures of possible failure. Youngsters who were able to learn to read and write on their own, however, achieved literacy because they were given a demonstrably effective program of stimulation. Thus, there is corroboration of literacy occurring along developmental pathways that are unique to each child. When high quality literacy encounters were provided, the experimental group displayed an interest in and capability for immediate involvement in the literacy

process. Teachers did not perceive the need to prepare the children for learning; the children were aware of what they needed to know and directed their own learning to achieve integral literacy experiences.

Implications

It is important to consider the noteworthy potential for gain suggested by a whole language approach. Children are able to develop phonetic skills even beyond what is generally expected in preschool code emphasis approaches, but also display sophisticated language and book handling skills as well as an appreciation of literature. Highly critical, too, is the children's sense of control--their recognition that they are able to participate in what is, after all, an abstract and complex process. It would appear, in fact, that the decision that children make regarding whether it is worthwhile to struggle with the intracacies of this process at all is related to perception of task relevance and mastery.

As children were shown to have gained an impressive array of literacy skills in a personally developmental fashion, irrespective of age constraints, school-prescribed artificial time boundaries for attainment of literacy may be inappropriate. It may be necessary to permit longer periods of time for written language competence to develop in some children--much in the same manner as children learning to speak are allowed linguistic exploration and growth that is not bound by prescribed time frames for completion of specified activities. On the other hand, children who do gain literacy skills at a relatively early age can be freed from the constraints of drills that are beneath their competency levels.

Table 1

Means and Standard Deviations for Pre- and Posttest Assessments of Emergent Literacy - Linguistic, Orthographic, Grapho-phonemic Literacy Set

Subtest	Pretest X	Pretest SD	Posttest X	Posttest SD	Gain	Adjusted X
			Experimental group			
TOLD	44.63	8.95	77.70	10.1	33.1	79.19
BHKT	14.78	3.40	24.52	1.76	9.7	24.50
MAT						
Letter recognition	16.78	6.57	25.48	0.700	8.7	25.50
Grapheme/Phoneme	--	--	19.19	3.67	--	--
			Comparison group			
TOLD	48.46	9.61	62.65	9.78	14.2	61.17
BHKT	14.50	2.76	19.85	2.43	5.4	19.87
MAT						
Letter recognition	17.30	5.99	24.65	1.72	7.4	24.63
Grapheme/phoneme	--	--	16.77	4.41	--	--

Note: Adjusted means from ANCOVA procedure.

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